



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,840	01/17/2004	Harry C. Sweere	44374.12.3	8767

22859 7590 06/07/2005

INTELLECTUAL PROPERTY GROUP
FREDRIKSON & BYRON, P.A.
200 SOUTH SIXTH STREET
SUITE 4000
MINNEAPOLIS, MN 55402

EXAMINER

STERLING, AMY JO

ART UNIT	PAPER NUMBER
----------	--------------

3632

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/759,840	Applicant(s) SWEERE ET AL.	
	Examiner Amy J. Sterling	Art Unit 3632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2005.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
 4a) Of the above claim(s) 34-36 and 45 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-33, 37-44 and 46 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 17 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/13/04; 7/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the first Office Action for application number 10/759,840 Support Arm, filed on 1/17/04. Claims 1-46 are pending. This application claims priority to provisional applications 60/441,143 dated 1/17/03, 60/471,869, dated 5/20/03, and 60/492,015 dated 8/1/03.

Election/Restrictions

Claims 34-36 and 45 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/18/05.

Information Disclosure Statement

The information disclosure statement submitted on 5/13/04, 7/16/04 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 3632

Claims 31 and 32 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The “downward movement of the first distal joint” is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The specification does not adequately teach how the joints are able to move “downward” when the joints are fixed and allow the strut to pivot about them.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 20-30 recite “as the first strut rotates relative to the cam” and the previous limitations of the claims have not limited that the first strut rotates with relation to the cam. There is a lack of antecedent basis for this limitation.

Claims 31 and 32 recite, that the joints move “downward” and it is unclear how this movement is possible to fixed joints.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

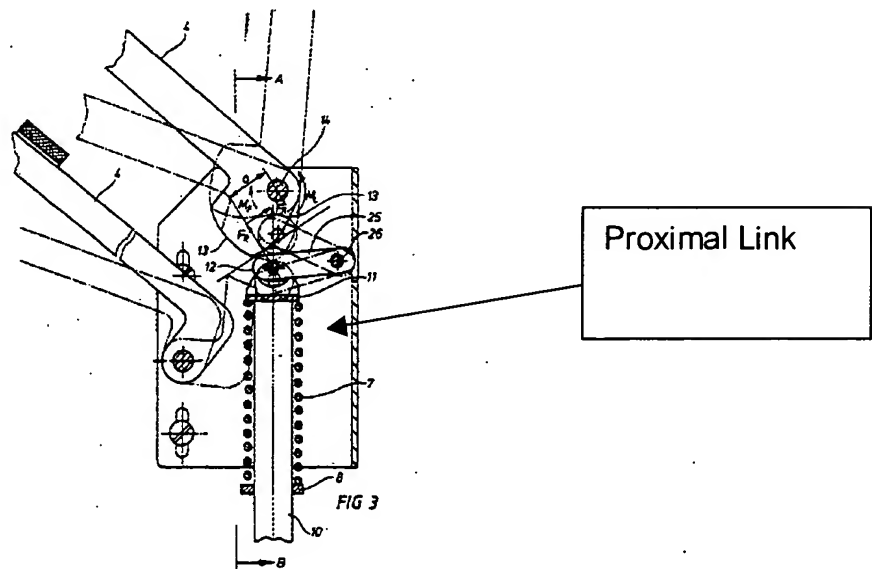
Claims 1-7, 10-19, 31-33, 37-44 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 5076533 to Schubert.

The patent to Schubert discloses a first strut (4) having a proximal portion pivotally coupled to a proximal link (See Drawing Below) at a first proximal joint (14) about a proximal pivot axis, a distal link (5) pivotally coupled to a distal portion of the first strut (4) at a first distal joint about a distal joint axis, a cam (13) with a substantially continually changing slot and substantially continually changing radius of curvature and is coupled to one of the links, a cam follower (12) being support by and contacting a cam surface of the cam at a first contact point, the cam and the cam follower cooperating to apply a cam moment to the first strut (See Col. 3, line 3-27) and the cam moment created by the reaction force between the cam and the cam follower is sufficient to balance a load supported by the distal link and a coil spring energy source (7) means for urging the cam follower against the cam surface, the strut moving up and down according to the compression or extension of the spring. Schubert also teaches an adjustment mechanism (8, 9, 27, 29) for varying a pre-load length characteristic of the spring, having a spring plate (9). Schubert teaches a second strut (4) having a proximal portion pivotally coupled to the proximal line at a second proximal joint and a

Art Unit: 3632

distal portion pivotally couple to a distal link at a second distal joint, forming a parallelogram with the first strut.

Schubert also teaches that the strut angle is defined by a longitudinal axis which extend through the first proximal pivotal joint and the first pivotal distal joint of the first strut and a direction of gravitational pull and wherein the cam moment varies as a function and in proportion to a SIN of the strut angle when the first strut rotates relative to the cam and wherein the contact angle is defined by a longitudinal axis of the first strut and a tangent line extending through a first contact point, and wherein the tangent line is tangent to the cam surface and tangent to a follower surface of the cam follower.



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 3632

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 9 and 20-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 5,076,533 to Schubert as applied to claims 1-3, 6, 7, 10, 18 and 19 above.

With regards to claims 8 and 9, although Schubert teaches a bolt (27) engaging a spring plate to adjust the spring, it is silent to the specific threads of the bolt and the thread of the plate it engages. It is inherent from the teaching however, that the bolt must contain threads, so that the bolt has a screw portion and it is inherent that the threaded bolt would need to engage a threads in the plate, in order to tension the spring in the desired manner as described by Col. 4 lines 8-14. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teachings of Schubert to have used threads in the configuration above in order to tension the spring as desired.

With regards to claims 20-30, Schubert teaches wherein the cam is shaped so that a radius of curvature of the cam varies as a function of SIN of the strut angle and that the moment creating component of the reaction force varies as a function of the changing contact angle as the first strut rotates and that the contact angle varies a TAN function as a SIN of the strut angle and wherein the deflection of the spring varies as a function of SIN of the strut angle, during rotation of the first strut. Schubert, however, does not teach wherein the first strut rotates relative to the cam. Schubert teaches that the cam is coupled to the first strut and that the cam follower is coupled to the proximal link. It would have been obvious to one having ordinary skill in the art at the time of the

Art Unit: 3632

invention was made to reverse the cam and the cam follower locations, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. In re Einstein, 8 USPQ 167.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following documents show various support arms

6890027 to Marie et al.

6523796 to Abramowsky et al.

6038986 to Ransil et al.

5292097 to Russell

5125631 to Brodersen et al.

5026117 to Faiks et al.

4979773 to Eubank

2535305 to Loepsinger

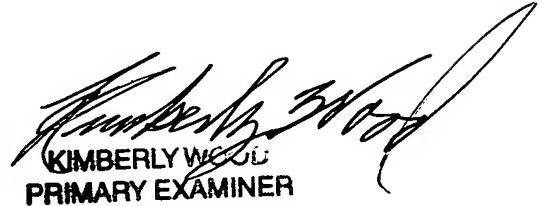
Any inquiry concerning this communication should be directed to Amy J. Sterling at telephone number 571-272-6823. The examiner can normally be reached (Mon-Fri 8am-5:00pm). If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Leslie Braun can be reached at 571-272-6815. The fax machine number for

Art Unit: 3632

the Technology center is 703-872-9306 (formal amendments), informal amendments or communications 571-273-6823. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist at 571-272-3600.



AJS
Amy J. Sterling
5/23/05


KIMBERLY WOOD
PRIMARY EXAMINER